Whisper Creek Emissions Methodology

The emissions methodology for the Whisper Creek Subdivision project utilizes a combination of Urbemis 2002 (version 8.7) and construction equipment estimates from the Sacramento Metropolitan Air Quality Management District's (SMAQMD) *Guide to Air Quality Assessment* (2004) Table 3.1 (revised). Both Urbemis and the SMAQMD Guide calculate the maximum daily acres disturbed during construction as one quarter of the total project site. For Whisper Creek, the project site excluding open space lots is approximately 45 acres which results in a maximum daily disturbed acreage of 11.25 acres.

Utilizing Table 3.1 (revised) "Construction Activity Equipment Types and Number Requirements" of the SMAQMD Guide, the expected number and types of construction equipment were determined for a maximum 11.25 daily acres disturbed for the Whisper Creek project. Table 3.1 is based upon 10 acres disturbed and SMAQMD recommends that the number of equipment for 10 acres be multiplied by a factor representing the expected disturbed acres for the specific project. This results in fractional pieces of equipment which can be used to accurately manually estimate emissions using the SMAQMD Equipment Emissions Rate in the SMAQMD Guide. However, Urbemis will not calculate fractional pieces of equipment. For the Whisper Creek project, the equipment needed for 10 acres disturbed was entered into Urbemis and the table below uses the multiplier for 11.25 acres to show the expected worst case emissions of ROG and NOx before mitigation.

Urbemis used the 11.25 acres of maximum disturbed acres to calculate the PM_{10} emissions from grading ground disturbance, so the multiplier was not used for PM_{10} emissions.

ROG	ROG and NOx Emissions for 11.25 acres Maximum Daily Acreage Disturbed for Whisper Creek Construction								
	ROG (un	mitigated)			NOx (unmiti	gated)			
	Urbemis Emissions with equipment for 10 acres disturbed	Multiplier for actual maximum acreage disturbed of 11.25 acres	Expected emissions for 11.25 acres disturbed		Urbemis Emissions with equipment for 10 acres disturbed	Multiplier for actual maximum acreage disturbed of 11.25 acres	Expected emissions for 11.25 acres disturbed		
Grading Worst case ROG	19.81	x 1.125	22.29	Grading Worst case NOx	134.10	x 1.125	150.86		
Building & asphalt Worst case ROG	213.11	x 1.125	239.75	Building and asphalt Worst case NOx	62.18	x 1.125	69.95		

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URBEMIS 2002 For Windows 8.7.0

File Name:

C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Whisper Creek Subdivision.u Whisper Creek Subdivision

Project Name: Project Location:

Project Location: Lower Sacramento Valley Air Basin On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT (Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES							
*** 2006 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	19.81	134.10	161.85	0.00	118.33	5.82	112.51
, , , , , , , , , , , , , , , , , , , ,			101.03	0.00	110.55	3.02	112.51
					PM10	PM10	PM10
*** 2007 ***	ROG	NOx	CO	SO2	TOTAL	EXHAUST	DUST
TOTALS (lbs/day,unmitigated)	6.68	47.79	51.93	0.00	2.19	2.12	0.07
					PM10	PM10	PM10
*** 2008 ***	ROG	NOx	CO	SO2	TOTAL	EXHAUST	DUST
TOTALS (lbs/day,unmitigated)	213.11	62.18	78.48	0.01	2.52	2.37	0.15
AREA SOURCE EMISSION ESTIMATES							
	ROG	NOx	CO	SO2	PM10		
TOTALS (lbs/day,unmitigated)	9.21	1.32	4.03	0.03	0.01		
OPERATIONAL (VEHICLE) EMISSION	ESTIMATES						
or Enabled (VENTOEE) Entropies	ROG	NOx	CO	SO2	PM10		
TOTALS (lbs/day,unmitigated)	7.50	7.87	80.67	0.05	7.71		
TOTALS (lbs/day, mitigated)	7.37	7.70	78.98	0.03	7.55		
					, , , , ,		
SUM OF AREA AND OPERATIONAL EMI		MATES					
	ROG	NOx	CO	SO2	PM10		
TOTALS (lbs/day,unmitigated)	16.71	9.19	84.70	0.08	7.73		
Both Area and Operational Mitig	gation must	be turne	d on to get	a combine	d mitigate	ed total.	

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URBEMIS 2002 For Windows 8.7.0

File Name:

Project Name:

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Whisper Creek Subdivision

Project Location: Lower Sacramento Valley Air Basin On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT (Pounds/Day - Winter)

CONSTRUCTION	EMISSION	FCTTMATEC

CONSTRUCTION EMISSION ESTIMATES	3						
*** 2006 *** TOTALS (lbs/day,unmitigated)	ROG 19.81	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
101ADD (1DS) day, dimittigated)	19.61	134.10	161.85	0.00	118.33	5.82	112.51
*** 2007 ***	ROG	NOx	CO	S02	PM10 TOTAL	PM10	PM10
TOTALS (lbs/day,unmitigated)	6.68	47.79	51.93	0.00	2.19	EXHAUST 2.12	DUST 0.07
*** 2008 ***	ROG	NOx	CO	SO2	PM10	PM10	PM10
TOTALS (lbs/day,unmitigated)	213.11	62.18	78.48	0.01	TOTAL 2.52	EXHAUST 2.37	DUST 0.15
AREA SOURCE EMISSION ESTIMATES							
MOMPL G (11/1	ROG	NOx	CO	SO2	PM10		
TOTALS (lbs/day,unmitigated)	67.76	3.35	108.52	0.26	16.10		
OPERATIONAL (VEHICLE) EMISSION	ESTIMATES						
	ROG	NOx	CO	SO2	PM10		
TOTALS (lbs/day,unmitigated)	7.84	11.81	91.98	0.05	7.71		
TOTALS (lbs/day, mitigated)	7.68	11.56	90.05	0.04	7.55		
SUM OF AREA AND OPERATIONAL EMI	SSION ESTI	MATES					
	ROG	NOx	CO	SO2	PM10		

ROG NOX CO SO2 PM10 TOTALS (lbs/day.unmitigated) 75.61 15.16 200.51 0.30 23.81

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

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URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Whisper Creek Subdivision.u Project Name: Whisper Creek Subdivision Project Location:

Lower Sacramento Valley Air Basin On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT (Pounds/Day - Winter)

Construction Start Month and Year: June, 2006

Construction Duration: 24
Total Land Use Area to be Developed: 45 acres Maximum Acreage Disturbed Per Day: 11.25 acres Single Family Units: 104 Multi-Family Units: 0 Retail/Office/Institutional/Industrial Square Footage: 0

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

		,	,,		PM10	DM1.0	DW1.0
Source	ROG	NOx	co	SO2	TOTAL	PM10 EXHAUST	PM10
*** 2006***			CO	502	TOTAL	EXHAUSI	DUST
Phase 1 - Demolition Emissio	ns						
Fugitive Dust	-	_	_	_	0.00	_	0 00
Off-Road Diesel	0.00	0.00	0.00	_	0.00		0.00
On-Road Diesel	0.00	0.00	0.00	0.00		0.00	0.00
Worker Trips	0.00	0.00			0.00	0.00	0.00
Maximum lbs/day			0.00	0.00	0.00	0.00	0.00
Maximum IDS/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emiss							
Fugitive Dust	TOUR						
3		-	-	-	112.50	-	112.50
Off-Road Diesel	19.60	133.86	157.45	-	5.81	5.81	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.21	0.24	4.40	0.00	0.02	0.01	0.01
Maximum lbs/day	19.81	134.10	161.85	0.00	118.33	5.82	112.51
Dhara 2 Dilli G	•						
Phase 3 - Building Construct							
Bldg Const Off-Road Diesel	6.23	49.82	44.34	-	2.30	2.30	0.00
Bldg Const Worker Trips	0.49	0.29	6.23	0.00	0.07	0.00	0.07
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	_	_		-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00		
Asphalt On-Road Diesel	0.00	0.00	0.00			0.00	0.00
Asphalt Worker Trips				0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	6.72	50.11	50.56	0.00	2.38	2.31	0.07
Max lbs/day all phases	19.81	134.10	161.85	0.00	118.33	5.82	112.51
*** 2007***							
Phase 1 - Demolition Emission	ns						
Fugitive Dust	_	_	_	-	0 00		0 00
Off-Road Diesel	0.00	0.00	0.00	_	0.00	-	0.00
On-Road Diesel	0.00	0.00	0.00		0.00	0.00	0.00
Worker Trips	0.00	0.00		0.00	0.00	0.00	0.00
Maximum lbs/day			0.00	0.00	0.00	0.00	0.00
naximum ibs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emiss	ions						
Fugitive Dust	LOMS						
Off-Road Diesel	0 00	-	-	-	0.00	-	0.00
	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phone 2 Published a second							
Phase 3 - Building Constructi							
Bldg Const Off-Road Diesel	6.23	47.51	46.08	-	2.12	2.12	0.00
Bldg Const Worker Trips	0.46	0.28	5.85	0.00	0.07	0.00	0.07
Arch Coatings Off-Gas	0.00	-	-	_	_	-	_
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	_	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	_	0.00	0.00	
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00		0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	6.68	47.79	51.93	0.00		0.00	0.00
, 4		11.15	51.75	0.00	2.19	2.12	0.07
Max lbs/day all phases	6.68	47.79	51.93	0.00	2.19	2 12	0 07
- •				0.00	4.17	2.12	0.07

Phase 1 - Demolition Emissic	ons						
Fugitive Dust	-	-	_	_	0.00	_	0.00
Off-Road Diesel	0.00	0.00	0.00	_	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emiss	sions						
Fugitive Dust	_	_	_	_	0.00		0.00
Off-Road Diesel	0.00	0.00	0.00	_	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construct	ion						
Bldg Const Off-Road Diesel	6.23	45.21	47.76		1 00		
Bldg Const Worker Trips	0.42	0.26	5.45	0.00	1.93	1.93	0.00
Arch Coatings Off-Gas	202.39	0.26	3.45		0.07	0.00	0.07
Arch Coatings Worker Trips	0.42	0.26	5.45	-	-	<u>-</u>	-
Asphalt Off-Gas	1.22	0.26		0.00	0.07	0.00	0.07
Asphalt Off-Road Diesel	2.24		-	-	-	-	-
Asphalt On-Road Diesel	0.18	12.97	19.01		0.36	0.36	0.00
Asphalt Worker Trips		3.47	0.66	0.01	0.08	0.08	0.00
Maximum lbs/day	0.01	0.01	0.15	0.00	0.00	0.00	0.00
1D5/day	213.11	62.18	78.48	0.01	2.52	2.37	0.15
Max lbs/day all phases	213.11	62.18	78.48	0.01	2.52	2.37	0.15

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions Start Month/Year for Phase 2: Jun '06 Phase 2 Duration: 2.6 months On-Road Truck Travel (VMT): 0 Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours /Dan
3	Crawler Tractors	143	0.575	Hours/Day 8.0
1	Graders	174	0.575	8.0
2	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Loaders	165	0.465	8.0
1	Scrapers	313	0.660	8.0
2	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions Start Month/Year for Phase 3: Aug '06

Phase 3 Duration: 21.4 months

Start Month/Year for SubPhase Building: Aug '06

SubPhase Building Duration: 21.4 months

Off-Road Equipment

Type Horsepower Load Factor Hours/Day 3 Other Equipment 190 0.620 8.0

Start Month/Year for SubPhase Architectural Coatings: Mar '08

SubPhase Architectural Coatings Duration: 2.1 months Start Month/Year for SubPhase Asphalt: Apr '08 SubPhase Asphalt Duration: 1.1 months

Acres to be Paved: 11.3 Off-Road Equipment

No.	Type	Horsepower	Load Factor	House /Dans
1	Pavers	132	0.590	Hours/Day
1	Rollers	114	0.430	8.0 8.0
			0.430	8.0

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AREA SOURCE EMISSION ESTIMATES	(Winter	Pounds per	Day, Unmi	tigated)	
Source	ROG	NOx	CO	S02	PM10
Natural Gas	0.10	1.30	0.55	0	0.00
Hearth	59.03	2.04	107.97	0.26	16.09
Landscaping - No winter emiss	ions				
Consumer Prdcts	5.09	_	_	-	_
Architectural Coatings	3.54	-	~	-	_
TOTALS(lbs/day,unmitigated)	67.76	3.35	108.52	0.26	16.10

UNMITIGATED OPERATIONAL EMISSIONS

Single family housing	ROG	NOx	CO	SO2	PM10
	7.84	11.81	91.98	0.05	7.71
TOTAL EMISSIONS (lbs/day)	7.84	11.81	91.98	0.05	7.71

Includes correction for passby trips.

Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2008 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	34.67	9.57 trips/dwelling unit	104.00	995.28
		Sum of Total Tr Total Vehicle Miles Trave		995.28 5,073.71

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.00	1.60	98.00	0.40
Light Truck < 3,750 lbs	15.00	2.70	95.30	2.00
Light Truck 3,751- 5,750	16.20	1.20	97.50	1.30
Med Truck 5,751- 8,500	7.20	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000		0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.70	76.50	23.50	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Traver conditions	Home-	Residential Home-	Home-		Commercia	1
Urban Trip Length (miles) Rural Trip Length (miles) Trip Speeds (mph) % of Trips - Residential	16.8 35.0	Shop 3.8 7.1 35.0 21.2	Other 4.6 7.9 35.0 51.5	7.8 14.7 35.0	Non-Work 4.5 6.6 35.0	Customer 4.5 6.6 35.0

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MITIGATED OPERATIONAL EMISSIONS

Single family housing	ROG	NOx	CO	SO2	PM10
	7.68	11.56	90.05	0.04	7.55
TOTAL EMISSIONS (lbs/day) PERCENTAGE REDUCTION %	7.68 2	11.56 2	90.05 2	0.04	7.55 2

Includes correction for passby trips.

Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2008 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	34.67	9.37 trips/dwelling unit	104.00	974.38
		Sum of Total T Total Vehicle Miles Trav		974.38 4,967.16

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.00	1.60	98.00	0.40
Light Truck < 3,750 lbs	3 15.00	2.70	95.30	
Light Truck 3,751- 5,750		-		2.00
		1.20	97.50	1.30
Med Truck 5,751-8,500		1.40	95.80	2.80
Lite-Heavy 8,501-10,000		0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00		
,		0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	
Motorcycle		- · ·		50.00
•	1.70	76.50	23.50	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

	Residential Home- Home- Home-				Commercia	ı
Urban Trip Length (miles) Rural Trip Length (miles) Trip Speeds (mph) % of Trips - Residential	16.8 35.0	Shop 3.8 7.1 35.0 21.2	Other 4.6 7.9 35.0 51.5	7.8 14.7 35.0	Non-Work 4.5 6.6 35.0	Customer 4.5 6.6 35.0

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MITIGATION OPTIONS SELECTED

Residential Mitigation Measures

Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 2.1% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips

Inputs Selected:

The Number of Intersections per Square Mile is 0 The Percent of Streets with Sidewalks on One Side is 40% The Percent of Streets with Sidewalks on Both Sides is 0% The Percent of Arterials/Collectors with Bike Lanes or where Suitable, Direct Parallel Routes Exist is 50%

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Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

Changes made to the default values for Area

The landscape year changed from 2005 to 2008.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on. The mitigation option switch changed from off to on. The operational emission year changed from 2005 to 2008. The Res and Non-Res Ped/Bike Mitigation changed from off to on.

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URBEMIS 2002 For Windows 8.7.0

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Project Name:

Project Location: Lower Sacramento Valley Air Basin On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT (Pounds/Day - Summer)

Construction Start Month and Year: June, 2006

Construction Duration: 24

Total Land Use Area to be Developed: 45 acres Maximum Acreage Disturbed Per Day: 11.25 acres Single Family Units: 104 Multi-Family Units: 0 Retail/Office/Institutional/Industrial Square Footage: 0

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

			, 44,		PM10	PM10	PM10
Source	ROG	NOx	CO	SO2	TOTAL	EXHAUST	DUST
*** 2006***			•	552		2	2001
Phase 1 - Demolition Emissio	ns						
Fugitive Dust	-	_	_	_	0.00	_	0.00
Off-Road Diesel	0.00	0.00	0.00	_	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125, 44,	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emiss	ions						
Fugitive Dust	-	-	_	_	112.50	_	112.50
Off-Road Diesel	19.60	133.86	157.45	_	5.81	5.81	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.21	0.24	4.40	0.00	0.02	0.01	0.01
Maximum lbs/day		134.10	161.85	0.00	118.33	5.82	112.51
222, 441	17.01	134.10	101.03	0.00	110.55	3.62	112.51
Phase 3 - Building Construct	ion						
Bldg Const Off-Road Diesel	6.23	49.82	44.34		2 20	2 20	0.00
Bldg Const Worker Trips	0.49			-	2.30	2.30	0.00
Arch Coatings Off-Gas	0.49	0.29	6.23	0.00	0.07	0.00	0.07
. -		- 00	-	-	-	-	-
Arch Coatings Worker Trips Asphalt Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-	0.00	-	-	-	-		
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt Morkon Tring	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	6.72	50.11	50.56	0.00	2.38	2.31	0.07
Max lbs/day all phases	10 01	124 10	161 05				
Max IDS/day all phases	19.81	134.10	161.85	0.00	118.33	5.82	112.51
*** 2007***							
Phase 1 - Demolition Emissio	ns						
Fugitive Dust			-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emiss	ions						
Fugitive Dust		-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construct	ion						
Bldg Const Off-Road Diesel	6.23	47.51	46.08	-	2.12	2.12	0.00
Bldg Const Worker Trips	0.46	0.28	5.85	0.00	0.07	0.00	0.07
Arch Coatings Off-Gas	0.00	_	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	_	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	_	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	6.68	47.79	51.93	0.00	2.19	2.12	0.07
						_	
Max lbs/day all phases	6.68	47.79	51.93	0.00	2.19	2.12	0.07
·							• • • •

Phase 1 - Demolition Emission	ns						
Fugitive Dust	_	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emiss	ions						
Fugitive Dust	-	-	_	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construct	ion						
Bldg Const Off-Road Diesel	6.23	45.21	47.76	-	1.93	1.93	0.00
Bldg Const Worker Trips	0.42	0.26	5.45	0.00	0.07	0.00	0.07
Arch Coatings Off-Gas	202.39	-	-	-	-	-	-
Arch Coatings Worker Trips	0.42	0.26	5.45	0.00	0.07	0.00	0.07
Asphalt Off-Gas	1.22	-	_	-	-	_	-
Asphalt Off-Road Diesel	2.24	12.97	19.01	-	0.36	0.36	0.00
Asphalt On-Road Diesel	0.18	3.47	0.66	0.01	0.08	0.08	0.00
Asphalt Worker Trips	0.01	0.01	0.15	0.00	0.00	0.00	0.00
Maximum lbs/day	213.11	62.18	78.48	0.01	2.52	2.37	0.15
Max lbs/day all phases	213.11	62.18	78.48	0.01	2.52	2.37	0.15

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions Start Month/Year for Phase 2: Jun '06 Phase 2 Duration: 2.6 months On-Road Truck Travel (VMT): 0 Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Crawler Tractors	143	0.575	8.0
1	Graders	174	0.575	8.0
2	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Loaders	165	0.465	8.0
1	Scrapers	313	0.660	8.0
2	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions

Start Month/Year for Phase 3: Aug '06

Phase 3 Duration: 21.4 months

Start Month/Year for SubPhase Building: Aug '06

SubPhase Building Duration: 21.4 months

Off-Road Equipment

Туре No. Load Factor Horsepower Hours/Day Other Equipment 190 0.620 8.0 Start Month/Year for SubPhase Architectural Coatings: Mar '08

SubPhase Architectural Coatings Duration: 2.1 months

Start Month/Year for SubPhase Asphalt: Apr '08 SubPhase Asphalt Duration: 1.1 months

Acres to be Paved: 11.3 Off-Road Equipment

0	Jaa Lqarpcc			
No.	Type	Horsepower	Load Factor	Hours/Day
1	Pavers	132	0.590	8.0
1	Rollers	114	0.430	8.0

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AREA SOURCE EMISSION ESTIMATES	(Summer	Pounds per	Day, Unmi	tigated)	
Source	ROG	NOx	CO	S02	PM10
Natural Gas	0.10	1.30	0.55	0	0.00
Hearth - No summer emissions				· ·	0.00
Landscaping	0.48	0.01	3.47	0.03	0.01
Consumer Prdcts	5.09	-	-	-	-
Architectural Coatings	3.54	_	_	-	_
TOTALS(lbs/day,unmitigated)	9.21	1.32	4.03	0.03	0.01

UNMITIGATED OPERATIONAL EMISSIONS

Single family housing	ROG	NOx	CO	SO2	PM10
	7.50	7.87	80.67	0.05	7.71
TOTAL EMISSIONS (lbs/day)	7.50	7.87	80.67	0.05	7.71

Includes correction for passby trips. Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2008 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	34.67	9.57 trips/dwelling unit	104.00	995.28
		Sum of Total T Total Vehicle Miles Trav		995.28 5,073.71

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.00	1.60	98.00	0.40
Light Truck < 3,750 lbs	s 15.00	2.70	95.30	2.00
Light Truck 3,751- 5,75	0 16.20	1.20	97.50	1.30
Med Truck 5,751-8,50	0 7.20	1.40	95.80	2.80
Lite-Heavy 8,501-10,00	0 1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,00	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,00	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,00	0.90	0.00	11.10	88.90
Line Haul > 60,000 lb:	s 0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.70	76.50	23.50	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Residential			Commercial		
Home-	Home-	Home-			
	Shop	Other	Commute	Non-Work	Customer
9.7	3.8	4.6	7.8	4.5	4.5
16.8	7.1	7.9	14.7	6.6	6.6
35.0	35.0	35.0	35.0	35.0	35.0
27.3	21.2	51.5			
	Work 9.7 16.8 35.0	Home-Work Shop 9.7 3.8 16.8 7.1 35.0 35.0	Home- WorkHome- ShopHome- Other9.73.84.616.87.17.935.035.035.0	Home- Home- Home- Work Shop Other Commute 9.7 3.8 4.6 7.8 16.8 7.1 7.9 14.7 35.0 35.0 35.0 35.0	Home- Home- Home- Work Shop Other Commute Non-Work 9.7 3.8 4.6 7.8 4.5 16.8 7.1 7.9 14.7 6.6 35.0 35.0 35.0 35.0

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MITIGATED OPERATIONAL EMISSIONS

Single family housing	ROG	NOx	CO	SO2	PM10
	7.37	7.70	78.98	0.04	7.55
TOTAL EMISSIONS (lbs/day) PERCENTAGE REDUCTION %	7.37 2	7.70 2	78.98 2	0.04	7.55

Includes correction for passby trips.

Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2008 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	34.67	9.37 trips/dwelling unit	104.00	974.38
		Sum of Total T Total Vehicle Miles Trave		974.38 4,967.16

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.00	1.60	98.00	0.40
Light Truck < 3,750 lb	s 15.00	2.70	95.30	2.00
Light Truck 3,751- 5,75	0 16.20	1.20	97.50	1.30
Med Truck 5,751-8,50	0 7.20	1.40	95.80	2.80
Lite-Heavy 8,501-10,00	0 1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,00	0 0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,00		0.00	20.00	80.00
Heavy-Heavy 33,001-60,00		0.00	11.10	88.90
Line Haul > 60,000 lb	s 0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.70	76.50	23.50	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

	Residential			Commercial		
	Home- Work	Home- Shop	Home-	G		
		Shop	Other	Commute	Non-Work	Customer
Urban Trip Length (miles)		3.8	4.6	7.8	4.5	4.5
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			-

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MITIGATION OPTIONS SELECTED

Residential Mitigation Measures

Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 2.1% (calculated as a % of 9.57 trips/day) Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips

Inputs Selected:

The Number of Intersections per Square Mile is 0
The Percent of Streets with Sidewalks on One Side is 40% The Percent of Streets with Sidewalks on Both Sides is 0% The Percent of Arterials/Collectors with Bike Lanes or where Suitable, Direct Parallel Routes Exist is 50%

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Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

Changes made to the default values for Area

The landscape year changed from 2005 to 2008.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on. The mitigation option switch changed from off to on. The operational emission year changed from 2005 to 2008. The Res and Non-Res Ped/Bike Mitigation changed from off to on.